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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,634	11/29/2005	Michael John Crabtree	2953-228	6183
6449 7590 03/19/2008 ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005				
EXAMINER LEONARD, KERRY W				
ART UNIT 3676		PAPER NUMBER		
NOTIFICATION DATE 03/19/2008		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

### Office Action Summary

**Application No.**

10/549,634

**Applicant(s)**

CRABTREE ET AL.

**Examiner**

KERRY W. LEONARD

**Art Unit**

3676

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 9/20/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-29, 31, 32 and 35 is/are rejected.
- 7) ☐ Claim(s) 8, 9, 30, 33, 34 and 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date 9/20/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 35 are rejected under 35 U.S.C. 112, second paragraph, because the phrase ‘...(herein “said third polymeric material”)...’ is unclear; it is not known if the items contained within the parentheses is part of the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 10-28, and 31-32 are rejected under 35 U.S.C. 102(b) as being anticipated by MARROCCO (US 4,939,203).

MARROCCO discloses a method of restricting passage of a fluid from a first location to a second location, the method comprising selecting a first material, selecting a second polymeric material which includes a functional group which is able to react in the presence of said first material to form a third polymeric material, causing the formation of said third polymeric material by a reaction involving said first material and said second polymeric material and arranging said third polymeric material between said first and second locations. With respect to the dependent claims, the reference discloses that the method

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restricts the passage of a fluid between two subterranean locations; that the first material and said second polymeric material are included in a restrictor formulation; a method of reducing the production of water from a water and oil producing subterranean formation which comprises contacting the formation with a restrictor formulation which comprises a first material and a second polymeric material each being described in claim 1 and/or a third polymeric material as described in claim 1; a method of plugging at least one relatively high permeability region bounded by at least one relatively low permeability region in a hydrocarbon bearing subterranean formation, said formation being penetrated by a well bore, the method comprising contacting said at least one relatively high permeability region with a restrictor formulation and or a third polymeric material as described in claim 4; that the method includes injecting a said restrictor formulation into a subterranean formation and causing it to move to a desired location in which it may restrict passage of fluid from a first location to a second location; that the ratio of the weight percentages of the first material to the weight percentage of the second polymeric material in the restrictor formulation is less than 0.15; that sum of the weight percentages of the first material and the second polymeric material in the restrictor formulation is at least 2 wt% and less than 15 wt%; that the restrictor formulation includes the wt%'s of water listed in claim 12; that the restrictor formulation includes an additional component which is substantially immiscible with pure water at 25 degrees Celsius that the additional component has a boiling point of greater than 110 degrees Celsius; that the additional component is a hydrocarbon or an oil; that the restrictor formulation

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includes a catalyst; that the restrictor formulation comprising the first and second materials and an additional component and catalyst is prepared at the surface and then injected into the subterranean formation; that the first material is one of the group of claims 18 and 19 and has the general formula of claims 20-22; that the second polymeric material comprises the structure of claims 23-26; and that a subterranean region having poor natural water conformance and/ or relatively high natural water coning is plugged with a third polymeric material.

With respect to claim 2, the reference discloses a method of restricting passage of a fluid from a first location to a second location, the method comprising positioning a polymeric material between the first and second locations wherein the polymeric material is a product of a reaction involving a first material and a second polymeric material which includes a functional group which is able to react in the presence of the first material to form a third polymeric group.

With respect to claim 27, the reference discloses a method of reducing the production of water from an oil-producing subterranean, said method comprising contacting the formation with a restrictor formulation which has a density between the densities of the oil and water in the subterranean formation, wherein the viscosity of the restrictor formulation increases subsequent to contact with said formation. With respect to the dependent claims, the reference teaches that the restrictor formulation includes comprising a first material and a second polymeric material wherein said second polymeric material includes a functional

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group which is able to react in the presence of said first material to form a third polymeric material.

With respect to claim 31, the reference discloses a first location and a second location wherein a third polymeric material is arranged between the first and second locations for restricting the passage of a fluid between the locations. (See column 3, lines 15-19, column 5, lines 45-65, column 7, lines 58-68, column 9, lines 58-68, column 10, lines 1-15, Examples 4-8).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over MARROCCO alone.

MARROCCO discloses a method of treating a subterranean formation as discussed above. However, the reference does not state that the restrictor formulation includes a density adjustment means for adjusting the density so that it is intermediate the densities of oil and water in the formation.

However, it would be considered obvious to one having ordinary skill in the art to utilize a fluid having a density between that of the oil and water in the

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subterranean formation in order to have the fluid settle on the interface between the oil and water phases in the formation and form the sealing means.

***Allowable Subject Matter***

Claims 8-9, 30, 33-34, and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KERRY W. LEONARD whose telephone number is (571)272-8133. The examiner can normally be reached on Monday-Friday, 10:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer H. Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer H Gay/  
Supervisory Patent Examiner, Art  
Unit 3676

/Kerry W Leonard/  
Examiner, Art Unit 3676  
3/3/08